

Calcified Tissue

INTERNATIONAL

Volume 44, 1989

Editor-in-Chief

L. V. Avioli

Washington University School of Medicine, The Jewish Hospital of St. Louis,
216 South Kingshighway, St. Louis, Missouri 63110, USA

Associate Editors

K. Hruska
St. Louis, Missouri

W. Peck
St. Louis, Missouri

M. P. Whyte
St. Louis, Missouri

Section Editor: Molecular and Cellular Biology

J. D. Termine
Bethesda, Maryland

Editorial Advisory Board

H. Fleisch
Bern, Switzerland

T. Fujita
Kobe, Japan

J. N. M. Heersche
Toronto, Canada

T. J. Martin
West Heidelberg, Australia

Editorial Board

C. Anderson
London, Ontario

J. P. Bonjour
Geneva, Switzerland

A. Boskey
New York, New York

R. Bouillon
Leuven, Belgium

J. S. Brand
Rochester, New York

E. Canalis
Hartford, Connecticut

M. K. Drezner
Durham, North Carolina

E. Eanes
Bethesda, Maryland

S. Epstein
Philadelphia, Pennsylvania

C. Gennari
Siena, Italy

M. Glimcher
Boston, Massachusetts

J. Glowacki
Boston, Massachusetts

M. P. M. Herrmann-Erlee
Leiden, The Netherlands

W. Jee
Salt Lake City, Utah

M. Kleerekoper
Detroit, Michigan

S. M. Krane
Boston, Massachusetts

R. Lindsay
West Haverstraw, New York

S. C. Manolagas
Indianapolis, Indiana

G. Mundy
San Antonio, Texas

C. Nagant de Deuxchaisnes
Brussels, Belgium

B. E. C. Nordin
Adelaide, Australia

K. Olgaard
Copenhagen, Denmark

B. R. Olsen
Boston, Massachusetts

P. Osdoby
St. Louis, Missouri

T. R. Overton
Edmonton, Alberta

P. Price
La Jolla, California

L. G. Raisz
Farmington, Connecticut

H. Rico Lenza
Madrid, Spain

G. Rodan
Westpoint, Pennsylvania

J. Rosenbloom
Philadelphia, Pennsylvania

G. V. Segre
Boston, Massachusetts

C. Sempes
Hyattsville, Maryland

D. Simmons
Galveston, Texas

M. Sobel
Bethesda, Maryland

T. Suda
Tokyo, Japan

S. L. Teitelbaum
St. Louis, Missouri

R. S. Weinstein
Augusta, Georgia

S. Weintraub
Tel Aviv, Israel



Springer International

The exclusive copyright for all languages and countries, including the right for photomechanical and any other reproductions, also in microform, is transferred to the publisher.

The use of registered names, trademarks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

Printed in the United States of America.
© by Springer-Verlag New York Inc. 1989.

Author Index

- Aaron, J. E. 387
 Adachi, Y. 46
 Akiyama, Y. 80
 Atkinson, S. J. 361
 Aubia, J. 298
 Aubia, J. 382
 Avioli, L. V. 1
 Avioli, L. V. 131
- Barden, H. 228
 Barger-Lux, M. J. 308
 Barnes, J. M. 387
 Baron, R. 1
 Barrett-Connor, E. 303
 Bar-Shira-Maymon, B. 36
 Bar-Shira-Maymon, B. 99
 Bendsen, H. 322
 Bengnér, U. 157
 Bengnér, U. 296
 Berger, P. S. 251
 Berquist, W. E. 330
 Bevan, J. 74
 Black, D. 343
 Blanchard, J. 67
 Block, J. E. 86
 Boesman, E. R. 114
 Bonjour, J.-P. 3
 Boskey, A. 20
 Boskey, A. 138
 Brixen, K. 93
 Busch, U. 176
 Busuttill, R. W. 330
- Callens, F. J. 114
 Campo, R. D. 234
 Canalis, E. 421
 Carasco, M. G. 173
 Carter, D. H. 387
 Charles, P. 93
 Closs, E. I. 25
 Cohen, A. 36
 Cohn, D. V. 1
 Coleman, R. 36
 Coleman, R. 99
 Collick, B. 228
 Collin, P. 11
 Colonna II, J. D. 330
 Crenshaw, M. A. 286
- Dacke, C. G. 209
 Dallal, G. E. 251
 Dawson-Hughes, B. 181
 Dawson-Hughes, B. 251
 de Vernejoul, M. C. 173
 Decker, J. E. 61
 Deehr, M. S. 251
 Deftos, L. J. 330
 Deftos, L. J. 399
 Delling, G. 176
 Delmas, P. D. 296
- Dewri, R. A. 399
 DiCarlo, E. 20
 Diez, A. 382
 Diez, J. L. 382
 Doi, Y. 200
 Donnelly, R. 138
 Draper, H. H. 335
 Draper, H. H. 339
- Elford, P. R. 356
 Endres, D. B. 330
 Ensign, C. P. 312
 Erfle, V. 25
 Erikson, E. F. 93
 Eriksson, S. A. V. 243
- Farquharson, C. 343
 Felix, R. 356
 Fleisch, H. 356
 Fogelman, I. 74
 Forest, N. 11
 Freudiger, H. 3
 Frost, H. M. 367
 Fujimori, A. 186
 Fujita, T. 186
 Fukase, M. 186
 Furuuchi, E. 269
- Gallagher, J. C. 168
 Garcia, J. C. 214
 Gärdsell, P. 235
 Gavin III, J. R. 131
 Genant, H. K. 86
 Gilligan, C. 312
 Goldberg, M. 11
 Goldstein, L. I. 330
- Halstad, L. 131
 Hanson, J. 228
 Hara, K. 80
 Hart, D. M. 74
 Hassankhani, A. 20
 Heaney, R. P. 308
 Heath, J. K. 361
 Hedlund, L. R. 168
 Hefley, T. J. 192
 Hesch, R.-D. 176
 Higaki, M. 220
 Hong, S. 46
 Hopps, R. M. 361
- Imura, H. 80
 Isberg, B. O. 243
 Ishida, H. 80
- Jerome, C. P. 406
 Johnell, O. 157
 Johnell, O. 235
 Joseph, E. E. 399
- Kapur, S. P. 108
 Kato, H. 80
 Kawase, T. 220
 Kim, K.-T. 220
- Kimoto, S. 220
 Kirkham, J. 393
 Kiyohara, K. 80
 Klein, G. L. 330
 Komori, T. 269
 Kotler, L. H. 69
 Krieger, N. S. 192
 Kuboki, Y. 269
 Kuntz, D. 173
- Leggate, I. 74
 Levy, J. 131
 Linde, A. 286
 Lindgren, J. U. 243
 Livne, E. 25
 Lorenzo, J. A. 61
 Lussi, A. 286
- Mäkinen, K. K. 258
 Mäkinen, P.-L. 258
 Martin, K. J. 214
 Martinez, M. T. 382
 Matthys, P. F. A. 114
 Mazess, R. 228
 Mazess, R. 322
 McAdam, M. 312
 McCarron, B. A. 61
 McConkey, C. L. 214
 McMillan, P. J. 399
 Meeger, C. 168
 Mendelsohn, R. 20
 Meunier, P. J. 1
 Miravet, L. 173
 Mizuno, M. 269
 Molloy, S. 322
 Morieux, C. 173
 Moriwaki, Y. 200
 Moriyama, K. 200
 Morrison, N. E. 61
 Mosekilde, L. 93
- Naessens, D. E. 114
 Nagai, M. 411
 Nakano, T. 220
 Narbaitz, R. 278
 Narbaitz, R. 348
 Nefussi, J.-R. 11
 Nielsen, H. K. 93
 Nilsson, B. E. 157
 Nilsson, B. E. 235
 Nozawa, M. 80
- Obrant, K. J. 157
 Obrant, K. J. 296
 Ogata, K. 80
 Ogawa, Y. 46
 Okuda, R. 200
 Ørtoft, G. 234
 Oxlund, H. 234
- Park, L. M. 258
 Peacor, D. R. 258
 Piel, C. F. 86
 Prokop, M. 176
 Puig, J. 382

- Rad, J. S. 278
Raisz, L. G. 1
Raisz, L. G. 61
Recker, R. R. 308
Reddi, A. H. 108
Reid, I. 131
Rittinghaus, E.-F. 176
Robins, S. P. 343
Robinson, C. 393
Rydziel, S. 421
- Sadowski, L. J. 251
Saito, S. 220
Samour, C. M. 61
Schmidt, J. 25
Schultz, R. L. 399
Scott, E. 74
Seino, Yo. 80
Seino, Yu. 80
Selvidge, R. 86
Septier, D. 11
Sernbo, I. 157
Shaw, A. J. 209
- Shibata, S. 200
Shih, M.-S. 298
Shimizu, N. 200
Shimokawa, H. 200
Shore, R. C. 393
Silbermann, M. 25
Silbermann, M. 36
Silbermann, M. 99
Sismey-Darrant, H. J. 361
Smith, E. L. 312
Smith, E. L. 364
Smith, M. L. 74
Smith, P. E. 312
Söderling, E. 258
Sokoll, L. J. 181
Steinhagen-Thiessen, E. 36
Steinhagen-Thiessen, E. 99
Sterkers, Y. 173
Stoner, S. 168
- Takeshita, N. 80
Takezawa, Y. 200
Takita, H. 269
- Tanaka, H. 80
Taniguchi, K. 269
Tanikawa, K. 220
Trempe, J. 228
Trilok, G. 335
Trilok, G. 339
Tsang, C. P. W. 348
Tsutsumi, C. 80
Tsutsumi, M. 186
- Verbeeck, R. M. H. 114
Vivancos, J. 382
- Wahl, L. M. 125
Wahl, S. M. 125
Wakamatsu, N. 200
Wientroub, S. S-1
Wientroub, S. 125
Wilson, M. 322
Winter, C. C. 125
- Yagi, T. 46
Yamada, H. 186

Subject Index

Acid base, 3
 Acid phosphatase, 99
 Acid production, 335, 339
 Adenylate cyclase, 214
 Aging, 36, 99, 181
 Alkaline phosphatase, 93, 99, 108, 220
 Anticonvulsant therapy, 80
 Apatite, 200
 Arachidonic acid, 186

BGP, 80
 Bisphosphonate, 3, 46
 Body weight, 235
 Bone, 3, 228, 312, 322, 367
 Bone ⁴⁵Ca uptake, 209
 Bone cells, 11, 192
 Bone circulation, 296
 Bone cultures, 421
 Bone density, 86
 Bone formation, 173
 Bone-gla-protein, 93, 296
 Bone isoenzyme, 93
 Bone loss, 74, 99
 Bone matrix protein, 200
 Bone metabolism, 296
 Bone mineral, 235
 Bone mineral density, 251, 406
 Bone remodeling, 367
 Bone resorption, 343, 356
 Bone turnover, 80, 406

Calcification, 200
 Calcitonin, 176
 Calcitriol, 86, 278, 348
 Calcium, 108, 131, 258
 Calcium absorption, 208
 Calcium binding, 269
 Calcium-induced precipitation, 269
 Calcium kinetics, 69
 Calcium nutrition, 308
 Calcium repletion, 399
 cAMP, 209
 Carbohydrates, 258
 Carbonate apatite, 114
 Cartilage, 25
 Cell, 131
 Cell growth, 186
 cGMP, 209
 Chemotaxis, 125
 Chick embryo, 278, 348
 Collagen, 200, 421
 Collagenase, 361
 Collagen synthesis, 411
 Colonic absorption, 308
 Combination therapy, 176
 Complex formation, 258
 Cyclic AMP, 214

Densitometry, 228
 Dentine, 46

Deoxypyridinoline, 343
 Development, 393
 Diabetes, 131
 Dichloromethylene bisphosphonate, 3
 Dietary protein, 335, 339
 Dihydrotestosterone, 108
 Diphosphonates, 74
 DNA synthesis, 411
 Drift, 251
 Dual photon absorptiometry, 243, 251

Enamel, 393
 Endochondral ossification, 20
 Epidemiology, 382
 ESR spectrum, 114
 Etidronate, 74
 Exercise, 312
 Expanding calcium pool, 69
 Extrarenal buffering, 3

Fatigue, 367
 Flow cytometer, 220
 Fractures, 235
 Fresh frozen sections, 387
 FT-IR, 20
 FT-IR microscopy, 20

Gallium, 138
 Gla-protein (osteocalcin), 286
 Glycosaminoglycan, 11

Hip fractures, 382
 Histomorphometry, 173, 387
 HPLC, 421
 Human iliac crest bone biopsy, 387
 Humans, 335
 Hydroxyapatite, 20, 138
 1-Hydroxyethylidene-1,1-Bisphosphonate, 3
 Hydroxyproline, 421
 Hypercalcemia, 61
 Hypercalciuria, 335, 339
 Hypomineralization, 46

Incidence, 382
 Indomethacin, 186, 411
 Infrared spectroscopy, 20
 Inhibition, 138
 Interleukin 1, 356
 In vitro, 25
 In vivo/In vitro, 11

Keratin, 393
 Kidney membranes, 214
 Kinetic model comparisons, 69

Leydig cell tumor, 61
 Liver disease, 330
 Load and stress, 243
 Low density bone, 406
 LPS, 361

Lumbar bone mineral content, 243
 Lymphocyte proliferation, 125

Macrophage, 125
 Macrophage colony-stimulating factor, 356
 Matrix-induced endochondral bone formation, 108
 MDP, 361
 Menopause, 74, 181, 235
 Metabolic acidosis, 3
 Microdamage, 367
 Mineralization, 286
 Mineralization rate, 93, 406
 Monoclonal antibodies, 220
 Morphological indices, 399
 Morphometry, 168
 Mouse, 25, 36, 99
 Murine leukemogenic virus, 25

Nephrocalcinosis-phosphaturia, 278
 Nucleation of calcification, 269

Obesity, 131
 24,25(OH)₂D₃, 348
 25OHD₃, 348
 Osteoblast, 192, 220, 356, 411
 Osteoblastic cell line, 186
 Osteoblasts, 173, 361
 Osteocalcin, 296
 Osteoclasts, 399
 Osteonectin, 200, 269
 Osteopenia, 36, 80
 Osteoporosis, 168, 173, 176, 228, 312, 343, 382
 Ovariectomy, 343

Parathyroid hormone, 192, 214, 330
 Phosphate, 86
 Phosphoprotein, 286
 Phosphorylation, 192
 Polyamions, 286
 Polyols, 258
 Polyunsaturated fatty acids, 186
 Precursor cells, 25
 Prostaglandin, 209
 Prostaglandin E₂, 411
 Protein, 393
 Protein complexes, 258
 Proteoglycan, 286
 Proximal femoral fractures, 382
 PTH, 176, 209, 421
 Pyridinoline, 343

Quantitative computed tomography, 243

Rapid diagnostic method, 387
 Rat, 131
 Rat incisor, 46
 Rats, 339
 Receptors, 214
 Renal clearance, 296
 Reversible mineral deficit, 406
 Rickets, 86

- Saliva, 258
- Seeded growth, 138
- Separation, 269
- Serum calcium concentration, 61
- Serum ionized calcium, 181
- Serum total calcium, 181
- Strength, 235
- Stress fracture, 367
- Tc99m-diphosphonate, 322
- Testosterone, 108
- Thionaphene-2-carboxylic acid, 61
- Tuft, 393
- Tumor necrosis factor, 356
- Ultrahistochemical study, 11
- Vertebra, 36, 99
- Vertebral fractures, 168
- Vitamin D, 278
- Vitamin D deficiency, 348
- Vitamin D₃ deficiency, 125
- Wheat germ lectin, 93
- Whole-body counting, 322
- Women, 312
- X-ray, 228

